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### Joint forces or forced cooperation

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## BIBLIOTHEKSVERBÜNDE

### Joint Forces or Forced Cooperation: Libraries and Library Networks at a Crossroads



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An overview is provided of the policies and plans of a selected number of library network organizations. It is based on a report that was presented to the French library organization ABES as an input for their new strategic plan. This report confirms that there is a clear need for new library systems for both the traditional services in the back office and for new discovery tools, using the opportunities provided by cloud computing. There is also an increasing pressure from universities, national authorities and funding bodies to work more efficiently and collaborate more closely.

Keywords: Library network; library cooperation; next generation library systems; discovery tools; cloud computing; Web scale

#### **Gebündelte Kräfte oder erzwungene Zusammenarbeit: Bibliotheksnetzwerke am Scheideweg**

Es wird ein Überblick über die Politik und Pläne einer Auswahl von Bibliotheksverbundorganisationen gegeben. Er basiert auf einem Bericht für die französische Bibliotheksorganisation ABES als Beitrag zu ihrem neuen strategischen Plan. Dieser Bericht bestätigt, dass es eine deutliche Notwendigkeit für neue Bibliothekssysteme gibt, sowohl für die traditionellen Dienste in den Dienststellen als auch für Werkzeuge, wobei die durch Cloud Computing gegebene Chance genutzt werden soll. Es gibt auch einen steigenden Druck der Universitäten, nationalen Behörden und der Finanzgremien, effizienter und gemeinschaftlicher zusammen zu arbeiten. Schlüsselwörter: Bibliotheksnetzwerk; Bibliothekskooperation; zukünftige Bibliothekssysteme; Suchwerkzeuge; Cloud computing; Internetskalierung

#### **1 Introduction**

Developments in the information environment and increasing financial pressure on research libraries as a result of the economic crisis will force libraries to reconsider what they can achieve on their own, what should be done in co-

operation with other libraries and what they should leave to external organizations. This is a relevant issue for all libraries, but also for library organizations and library consortia should they be considering their strategy for the near future. In Germany this issue has become highly relevant after a report by the Wissenschaftsrat ("Empfehlungen zur Zukunft des bibliothekarischen Verbundsystems in Deutschland") and the joint recommendations of the Wissenschaftsrat and the Deutsche Forschungsgemeinschaft.

In November 2010, L'Agence Bibliographique de l'Enseignement Supérieur (ABES) asked Ticer at Tilburg University in the Netherlands to undertake an environmental review as input for the development of ABES's new strategic plan for the period 2012-2015. On behalf of Ticer, it was an honor and a pleasure for me to undertake this task. ABES is an agency instituted by the French Ministry of Culture that is in charge of the Système Universitaire de Documentation (SUDOC), the Library Union Catalogue for academic, specialist and other Higher Education libraries in France. This joint French catalog is based on the Central Library System (CBS), provided by Ohio College Library Center (OCLC) and previously by Pica in the Netherlands. In the last few years the role of ABES has been extended to other activities, including involvement in the development of nation-wide license agreements in close cooperation with Couperin. ABES has also developed the STAR portal for e-theses produced in French research universities.

For ABES it was important to look at library organizations with a similar role to their own and not at organizations that are primarily or only focused on licensing. Various questions had to be answered: How are the various networks, library organizations and consortia of libraries in other countries responding to the current challenges? What is their focus? How are they preparing for the future? How will the relationship between these network organizations and their member libraries change in the near future?

For this report, recent publications and strategic plans of a selected number of library network organizations and service providers were studied. Specific information was also received electronically from a number of network organizations in Europe. Meetings were organized with representatives of some of these organizations and with the major service providers, Ex Libris and OCLC. It should be stressed that this study cannot be regarded as comprehensive, but concentrates on organizations that offer the most relevant examples for ABES. Nevertheless, the overview gives a good picture of the current situation and the challenges for library network organizations, the partners in their networks and the funding bodies involved.

Another aspect to note is that ABES provides services to research organizations. Most of the network organizations and library service organizations started with services for academic institutions, but some of these organizations have since expanded their role, supporting other types of libraries, including public libraries. In view of this French context, my focus has been on services supplied to research libraries.

The full report<sup>1</sup> was presented to ABES in March 2011.

A final introductory remark should be made concerning the fact that the ABES report was based on the situation in the first months of 2011 and the activities of library network organizations can change relatively rapidly: the views of people change and governmental policies and the economic situation also have an impact. However, the major trends are clear and the challenges reveal that libraries and their library network organizations are at a crossroads. Are libraries prepared to collaborate more on issues that have been regarded as their own domain for a very long time? Are libraries prepared to leave more services to library network organizations or commercial service providers? Are the current library network organizations ready to take up these challenges?

## 2 Library Cooperation, Library Consortia and Library Networks

As Mudd and Havens<sup>2</sup> write:

*“... working together to solve difficult common problems and share resources is nothing new to libraries. But now, almost a decade into the 21st century, we can see that increasing technological and social changes impact how all individuals and groups cooperate. Coming from a long tradition of sharing, libraries may be better-suited than other industries to benefit from increased cooperative opportunities.”*

Crises and the challenges faced when dealing with new developments are good reasons for libraries to cooperate and to create a network or a consortium. An early example of library cooperation in the United States was the Farmington Plan, which was developed in 1939 by American research libraries to ensure access to research materials and publications regardless of war or other disruptive events around the world. The plan created a cooperative acquisitions program for foreign materials by region and subject. The project ended in 1972.

In the 1960s the information explosion and the rising costs of information were a stimulus to the creation of the Ohio College Library Center (OCLC), a cooperative, computerized network in which most Ohio libraries would par-

ticipate. The catalogs of Ohio libraries were merged electronically through a computer network. This would streamline operations and control rising costs. As we know, this organization expanded into a successful not-for-profit service provider for all types of libraries around the world.

These developments in the US inspired library cooperation in Western Europe. In the 1970s university librarians and the librarian of the Royal Library in the Netherlands followed this example and created Pica as a joint project for library automation. Pica became a legal entity that gradually developed into a service provider with a wider scope, moving beyond the governance of the founding fathers. In 1990 Pica extended its activities to Germany (Wolfenbüttel, Deutsche Bibliothek, Gemeinsamer Bibliotheksverbund GBV) and in 1997 also to France (ABES).

The first goal in the Netherlands, Germany and France was to develop a union catalog based on joint cataloging by research libraries. The next step in the Netherlands and Germany (Lower Saxony) was the implementation of a common Local Library System (LBS).

Similar developments in library cooperation focusing on joint cataloging, resource sharing and cost reduction took place in many other countries. Another interesting early example is Norway, where the BIBSYS project was created in 1972 with the purpose of automating the internal processes of two academic libraries. In the 1990s a new wave of library cooperation and consortium development was initiated by the need to join forces in relation to the licensing and management of electronic information resources. In the US, various consortia were established. One of them, the California Digital Library, was founded in 1997 “to take advantage of emerging technologies that were transforming the way digital information was being published and accessed”. In European countries, libraries joined forces in order to define the terms and conditions of a license agreement and to start joint negotiations with publishers that would lead to better prices and conditions. Examples are FinELib in Finland created in 1997 and Heal-Link in Greece in 2000.

The first long term “big deal” with the major publishers on electronic journals was negotiated by the research libraries in the Netherlands in 2000. Later, these libraries decided to liaise with the SURF foundation, which was asked to organize the business of licensing e-resources and to provide professional support in the negotiation process.

The International Coalition of Library Consortia (ICOLC) has played and is still playing an important role in bringing library consortia together, exchanging information and putting pressure on publishers and vendors to provide better conditions. Forty-five different European consortia currently participate in this international coalition.

It is interesting to note that most library organizations which were created for the sake of cooperation on library automation and joint cataloging gradually extended their scope and activities and that various consortia created in the 1990s to jointly negotiate license agreements have also extended their mission and goals.

1 Environmental scan as an input for the development of a strategic plan of ABES for the period 2012-2015/ by Hans Geleijnse, TIGER, Tilburg University, March 2011. <[http://www.abes.fr/abes/documents/article%20WEB/ReporABE0703def0604\\_Vfinale.pdf](http://www.abes.fr/abes/documents/article%20WEB/ReporABE0703def0604_Vfinale.pdf)>.

2 Cooperative solutions arise from great challenges/ by Sara Mudd and Andy Havens, *Library cooperation in the 21st century*, No. 12, June 2009. <<http://www.oclc.org/nextspace/012/1.htm>>.

Burke<sup>3</sup>, director of the Statewide California Electronic Library Consortium, stresses that library consortia have been influential not only in the “acquisition of electronic resources” and developing acceptable licensing terms and conditions but also in the following areas:

- The preservation and archiving of electronic journals and other e-resource information
- The importance of usage statistics as a metric for the value of acquired information
- Developing collaborative models of print resource sharing
- Streamlining and consolidating technical services through a centralized (i.e., union) catalog
- Professional development and training
- Collaborative digitization projects, including setting standards for best practices and providing training therein
- For those consortia which are statewide or government funded, providing advocacy for libraries and library funding

Burke underpins an observation made earlier by Landesmann and Van Reenen<sup>4</sup>, as well as Geleijnse<sup>5</sup> and others that “the most effective library consortia will move beyond buying clubs for electronic resources and provide significant value in other ways.”

### 3 Relevant Trends and Developments in the Information Environment

Libraries are now working in a rapidly changing environment. Some of the trends and developments we can observe are particularly important for the future decisions of library network organizations.

#### 3.1 Licensing and the Move to Electronic Only

Surveys confirm that most “users appreciate the convenience of electronic access over the physical library.” An Itaka report from April 2010<sup>6</sup> reveals the gradual decline in the perceived importance of the gateway function over time and the gradual increase in the perceived importance of the buyer function of the library. This suggests that the role of

the library and library consortia in licensing and organizing access to electronic resources will remain very important.

The Open Access movement is gradually becoming stronger and will have a major impact on the future business models of scholarly publishing. Change will come, but it will probably take more time than expected. The logical and inevitable move to “electronic only and the cancellation of print subscription to journals” can also be best organized jointly. Usually this is not done without well-defined agreements and provisions with respect to digital archiving and preservation, agreements on perpetual access and the creation of both a national and international reserve of printed works.

The pressure on budgets, the cost of storage space and the need to create learning spaces might speed up this move to e-only.

#### 3.2 Access to Metadata

Gradually more and more metadata are becoming available from publishers, service providers and booksellers ([http://wikibon.org/wiki/v/Cloud\\_Meta\\_Data:\\_Driving\\_New\\_Business\\_Model](http://wikibon.org/wiki/v/Cloud_Meta_Data:_Driving_New_Business_Model)).

Service providers stress the importance of networked resources and aim to access metadata available from the cloud using “metadata hubs” in various countries which could replace the existing national or regional catalogs. The aim is to create a large virtual-knowledge base. Cooperative work and networked activities of libraries will decrease the workload for individual libraries with respect to cataloging.

#### 3.3 Discovery Services

In February 2010, JISC and OCLC published a report that analyzed the findings of twelve user-behavior studies in the US and the UK. This report stated that:

*“The evidence provided by the results of the studies supports the centrality of Google and other search engines. Google is often used to locate and access e-journal content. At the same time, the entire Discovery-to-Delivery process needs to be supported by information systems, including increased access to resources. ... Library systems need to look and function more like search engines, i. e., Google and Yahoo, and Web services, i.e., Amazon.com, since these are familiar to users who are comfortable and confident in using them.”*<sup>7</sup> (<http://www.jisc.ac.uk/publications/reports/2010/digitalinformationseekers.aspx>)

This implies that library systems will require new functionalities such as:

- To look and function more like search engines
- Metadata of high-quality sufficient to facilitate efficient and effective discovery of appropriate resources
- Seamless access to resources

3 Library Consortia and the Future of Academic Libraries/ by Richard Burke, 2010. <<http://www.neal-schuman.com/academic/Burke2010.pdf>>.

4 Consortia vs. Reform: Creating Congruence/ by Margaret Landesmann and Johann van Reenen. *The Journal of Electronic Publishing*, Vol. 6, No. 2, December 2000. <<http://www.press.umich.edu/jep/06-02/landesman.html>>.

5 Electronic Publishing of Scholarly Scientific Information: An Overview of Developments and Key Issues/ by Hans Geleijnse – in: Ticer International Summer School on the Digital Library, October 2001. A Challenging Future Awaits Libraries Able to Change/ by Jola Prinsen, D-Lib Magazine November 2001, Volume 7 Number 11. <<http://www.dlib.org/dlib/november01/prinsen/11prinsen.html>>.

6 Faculty Survey 2009: Key Strategic Insights for Libraries, Publishers, and Societies, Ithaka, April 2010. <<http://www.ithaka.org/ithaka-s-r/research/faculty-surveys-2000-2009/faculty-survey-2009>>.

7 The Digital Information Seeker. Report of findings from selected OCLC, RIN and JISC user behavior projects, JISC and OCLC, February 2010. <<http://www.oclc.org/research/activities/dis/default.htm>>.



### 3.4 Cloud-Based Services and Important Service Providers

The National Institute of Standards and Technology, an agency of the US Department of Commerce, defines cloud computing as “a model for enabling convenient, on-demand network access to a shared pool of configurable computing resources (e. g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction.” The development of cloud computing can be regarded as a response to the demands for more flexibility, integration and efficient solutions to reduce the work in the back-offices of organizations.

ILS vendors are now offering cloud-hosted versions of their products. This concept is being used in a new generation of library services, in particular by Ex Libris and OCLC.

In January 2011 Ex Libris announced the cloud-based ALMA Library Management Service, a next-generation framework for library services “consolidating, optimizing and extending library workflows.” The important capabilities of ALMA are “unified resource management, collaborative metadata management, intelligent collection development based on relevant user information, Web services and open interfaces based on SOA architecture.”

This concept emphasizes integration into the environment of the research library and the research university, including union catalogs, Open Access repositories, research management systems and learning management systems.

The current strategy of OCLC is to make full use of Web technologies and cloud computing. Their “vision is to use Web scale to deliver library resources, services and expertise at the point of need, within the user workflows and in a manner that users want and understand.” These Web-scale management services are “regarded as a library system of the next generation with tools for online library management, metadata management, acquisitions, lending, license management and library administration.” These services can be provided “from the cloud.”

A report by the Association of Research Libraries<sup>8</sup> expects that “in the 2015 technology environment, much that is currently managed locally will be managed in a distributed manner – through collaborations within institutions or among institutions or by contracting services from the commercial sector. Local management of content and storage systems will be a waning paradigm as distributed, virtualized storage becomes the norm.” (<http://www.arl.org/bm~doc/repository-services-report.pdf>)

### 3.5 Privacy, Security, Data Protection and Preservation

These new developments also give cause for concern. Various organizations such as Google are providing great service but do not always observe privacy issues.

<sup>8</sup> Final Report of the ARL Digital Repository Task Force, Washington, January 2009. <<http://www.arl.org/news/pr/repositories-3feb09.shtml>>.

A number of incidents reveal that libraries and library organizations should put more emphasis on the safeguarding of data and also on the sustainability of their services. Digital preservation is on the agenda of many libraries and some organizations are committed to addressing this problem, but genuine sustainable solutions should still be realized.

### 3.6 Budget

In most countries libraries are facing or will have to face the effects of the economic crisis and will have to realize significant savings. Services will be monitored more critically by the parent institution and valued on their cost-effectiveness. Libraries will be encouraged to assess and evaluate their services and their organization. This might also have an effect on vendors and suppliers, who may be forced to reduce their costs and sometimes even their prices.

User demands, the opportunities and the threats that arise due to the changing information environment and the economic problems libraries are facing will stimulate libraries and library consortia/networks to reconsider their roles and activities.

## 4 Development and Strategy of Library Network Organizations

The study of the development and the strategy of the selected library network organizations, in particular in Europe, confirms that the above-mentioned trends in the user and information environment are being taken into account, leading to the implementation of new strategies and activities.

The key activities of these organizations have been in the area of cataloging and back-office services in licensing and more recently also in repository services. Analyzing the strategies and plans of the various organizations, I would like to distinguish the following core activities for the future:

- Providing back-office services of the next generation to the libraries in the network
- Providing first-class discovery services to the participating libraries
- Repository services
- Research information systems
- A variety of other services

### 4.1 The Next Generation of Back-Office Services

The strategic plans of important consortia in the United States such as Lyasis, a merger of PALINET, SOLINET and NELINET, serving more than 6,000 institutions, and the California Digital Library (CDL) emphasize the new developments in back-office services. Lyasis stresses the need to explore and implement services built on next-generation bibliographic and resource sharing standards.

An important theme in the current strategic plan of the CDL is the “next generation of library services, new solutions for library services including acquisitions, ingest,

content management, discovery, preservation, data curation and publishing.”

In Europe, various library network organizations provide support to or host a local library system. In Germany, the Verbundzentrale (VZG) of the Gemeinsamer Bibliotheksverbund (GBV) manages the LBS 4 Local Library System – originally developed by Pica in the Netherlands and now maintained by OCLC – for more than 170 libraries on 29 different installations. The VZG has customized LBS according to its own goals and intends to continue this approach in the future. VZG will provide hosting solutions for LBS, Open URL Linkresolver, Portal solutions and Streaming Video. For the future, VZG will focus on Open Source software components in order to realize high flexibility and vendor independence in the area of the local library system.

The Bibliotheksservice Zentrum Baden-Württemberg (BSZ) supports the libraries in the network in the migration from Horizon software to aDIS/BMS, provided by ASTEC GmbH. This migration should take place in the next two years. The other library networks in Germany have planned or are planning their own solutions for back-end services. This provides a colorful picture of solutions and approaches in this country.

For a long time the majority of the research libraries in the Netherlands used the local library system provided by Pica. A few years ago important founding fathers of Pica, such as the Universities of Leiden and Amsterdam, moved to the Aleph system of Ex Libris. Various university libraries are now considering a migration to a library system of the next generation, but in the Netherlands there is also a lack of concerted action and harmonization in this area.

In Finland, the National Library Network Services offers a service package to libraries, including the hosting of digital library software (Voyager, Metalib, EnCompass) for the various institutions, and also offers a retrieval portal with Metalib and SFX software, a digital object management system (Doria; using DSpace) and the organization and presentation of joint statistics for research libraries. The aim is clearly to use resources efficiently by concentrating the services. A goal for the next phase is, in collaboration with the libraries, to define what kind of library system Finnish libraries need for the future and to decide between Open Source solutions and commercial solutions.

In this respect it is interesting to learn about recent developments in Norway. The library organization BIBSYS, which reports to the Norwegian Ministry of Education and Research, decided to make an agreement with OCLC on Web-scale Management Services (WMS) as a result of a tender procedure for a new system with back-office services and front-end discovery tools. This is a remarkable step since BIBSYS has a long history as a supplier of an in-house developed library system for research universities in the country. The directors of the university libraries in Norway stressed as early as 2008 that the BIBSYS library system “should be replaced as soon as possible by a new library system, a well-functioning modern ILS that would be a complement to other support tools and systems already in place.” ([http://www.bibsys.no/files/pdf/future\\_of\\_academic\\_libraries/foredrag\\_hana\\_christie.pdf](http://www.bibsys.no/files/pdf/future_of_academic_libraries/foredrag_hana_christie.pdf))

One of the important arguments in this debate was that the traditional library management system no longer fits into today's academic environment. Seamless integration with the financial system of the university (to control the whole acquisition area of the library), the human resources management system and the user-identification system would be key topics to be considered in relation to a brand new system.

The main reasons for the decision to move to a new system provided by OCLC were the following:

- The architecture presented by OCLC was convincing. It was a genuine redesign, not a means of reshaping the ILS. For BIBSYS, the Service Oriented Architecture was a key issue, since this would provide optimal conditions for integration with other services. The new product is not available yet, but OCLC had managed to demonstrate a pilot and to provide more information about their new approach.
- The content that OCLC can provide is an asset. The company puts a lot of effort into making agreements with vendors, it has WorldCat, the largest global catalog, and the knowledge base for electronic resources will be an efficient tool for all participating libraries. Moreover, the agreement with Google will guarantee that all relevant information will also be or become visible through Google.
- OCLC is in a position from which it can and will adapt to changes and new developments and demands in the future.

BIBSYS will be an early user of these new products and services which should be in place on January 1, 2013. It is the goal of all libraries that the OCLC solution will replace everything that is currently working, both in the back-office and at the front-end. This means that:

- nothing will run locally anymore
- most of the services will run at OCLC (in the cloud); while the user database will remain in Europe it will not necessarily be in Norway
- the activities at the BIBSYS office will diminish, unless libraries demand specific applications that will have to be developed

The Norwegians are clear about the ownership of the metadata. It is the firm policy of the ministry that the Norwegian state owns the data. This principle will not change with the cloud solution. This means that it will always be possible to switch to another vendor if needed. It is obvious that the experiences in Norway will be closely observed by other library organizations and individual libraries.

In general there is a growing interest in the developments and possibilities of cloud computing. All library network organizations are considering the opportunities and the constraints, but all are quite certain that the user database should not be located in the United States, in view of US law and current privacy regulations. As we have seen in Norway, in most countries there is a firm standpoint that the metadata produced by the libraries in their national networks can be used by others, but should remain under the ownership and control of the national government or governmental authorities.

## 4.2 Providing First-Class Discovery Services for the Libraries in the Network

Various library network organizations are already providing portal software for federated searching and linking tools to the libraries in their network, such as CBUC in Spain (Metalib and SFX), GBV in Germany (Touch Point and SFX), HBZ in North Rhine-Westphalia (DigiBib). BSZ in Baden-Württemberg uses a BAM portal developed in-house based on Lucene, and the National Library Network Service in Finland offers a retrieval portal with Metalib and SFX software. These are a few examples of the colorful picture in Europe.

All of the organizations are aware that these solutions are inadequate to meet the expectations and demands of today's users and to compete with Google. For this reason all of these organizations, as well as library network organizations that do not yet offer this type of service, are currently engaged in the selection of and decisions concerning discovery tools of the next generation.

In Switzerland, the Réseau des Bibliothèques de Suisse Occidentale (RERO) has established a working group to prepare the selection of a "single entry point for the access of all information resources": the catalog, the electronic resources, local institutional repositories, etc. This working group will evaluate discovery tools such as Ex Libris' Primo Central, Serials Solutions' Summon, OCLC's WorldCat Local, EBSCO Discovery Service (EDS) and VTLS's Chivas.

In Spain, CBUC is planning a migration to Primo Central with Primo User Interface as the discovery tool.

In 2010, HBZ and VZG, who are currently using different systems, published a joint report on the most important commercial search engines or "discovery services" that are being used to search and find information in the various participating libraries and in a wide range of external sources. A comparison of the new products with the existing information portals DigiBib (HBZ) and OCLC Touch Point (VZG) was made on content, functionality and interoperability.

The report focused on the EDS, Primo Central and Summon and concluded that all these products were performing well and are usable. When compared, EDS and Primo Central showed significantly better results on the selected criteria than Summon. OCLC's WorldCat Local was not included in this survey because the product was not available in Germany at the time of the survey. There has not yet been any clear follow-up to this report indicating whether these two major library network organizations will actually choose the same discovery tool. As mentioned above, BIBSYS in Norway has chosen a unified and comprehensive solution based on the new tools provided by OCLC.

This brief overview shows that harmonization and collaboration with respect to these major changes is rather limited. Only a few countries have undertaken joint acquisitions at the national level, often stimulated by the national authorities. In most countries, competition between and different approaches and views of libraries and regional library networks still prevail. Is this the best way to create added-value with respect to the commercial search engines such as Google, Google Scholar and Yahoo? More harmonization and co-

operation in the field of access to and linking of metadata in electronic resources would contribute to the optimization of searching and to the reduction of costs. The tools that are now in place for virtual collaboration and data exchange in the cloud should be used.

An increasing number of libraries are doubtful about the usefulness of the acquisition of new discovery services. In the debate in Norway on the future of library systems, the library of the University of Science and Technology in Trondheim questioned whether the acquisition of a new library system would really offer a solution to the problems libraries are facing. They suggest that while libraries are making the best efforts to market their portal and search solutions to users, the reality is that users are using Google and Google Scholar. Is it really useful to spend a lot of money on buying new systems that nobody will use? The Ithaka report (2009) also urges libraries "to consider carefully the investments they make in search and discovery services."

What would be the added-value of library services based on specific commercial discovery services in this situation?

The delivery function still works better in the commercial and in-house solutions than in the "Google-only" situation, but this might change in the future. The quality of and the access to relevant metadata are important conditions for professional discovery, links to the full text available in Open Access repositories and in commercial databases, and delivery of the content. Improving the current fragmented and inefficient situation would be a real challenge and requires concerted action from libraries and library network organizations.

## 4.3 Repository Services

The debate on a new generation of back-office services and first-class discovery tools is at the top of the agenda of library network organizations, but most organizations are also engaged in the development of repository services, in hosting repositories or harvesting the metadata and in establishing links with full-text information in institutional repositories of the libraries in their network:

- RERO maintains the RERODOC digital library that functions as a repository for grey literature such as theses, dissertations, preprints, post-prints and research reports.
- CBUC provides institutional repository services for the various universities in the consortium. The goal is to collect the intellectual production of all Catalan universities, along with the dissemination of Open Access publications in Catalan or published in Catalonia. These services include theses and dissertations, Catalan Open Access journals, the research repository of Catalonia and the Digital Memory of Catalonia.
- The installation of repository software is one of the services of the VZG. One of the goals of the current strategic plan is to offer repository systems and to analyze what services can be provided to partners in the area of research data.
- In Baden-Württemberg the Open Source repository software OPUS, developed at the Stuttgart University Li-



brary, is used in about 100 colleges and universities. BSZ is planning to develop services for embedding the content of the repositories in other services, such as the union catalog.

- BIBSYS has developed repository software based on DSpace, but most universities are using slightly different repository systems. With the acquisition of OCLC's WMS, harmonization in the area of repository services should also be achieved.
- One of the services of the Network in Finland is a digital object management system based on DSpace.

The trend is for library network organizations to recognize that they have to be involved in this area but that the solutions vary. A link with the current research information system of the university or with a national research information system would be beneficial to and encourage the development of repositories. Some library networks are already working in this direction.

#### 4.4 Research Information Systems

In the Netherlands excellent infrastructure has been developed with respect to research information and repositories. A National Academic Research and Collaborations Information System (NARCIS) has been developed by the Royal Academy of Sciences (KNAW) to increase the visibility and retrievability of Dutch scientific research. This development has taken place in close cooperation with the Dutch universities, the Netherlands Organisation for Scientific Research (NWO) and other research institutes.

NARCIS gives access to scientific information consisting of Open Access and other publications from the repositories of all of the Dutch universities, the datasets of the national data archive DANS, as well as descriptions of research projects, institutes and researchers. All metadata are now in NARCIS. They can be linked with the full text that is available in and through the institutional repositories of the universities and other research organizations. The information in this national system is the basis for regular reports to the universities, the ministry and the funding bodies. It is the basis for reviews and assessments of research outputs, but also for the production of publication lists of individual researchers.

In Spain, the CBUC is working on the interoperability of the repositories and current research information systems. At the local level some Catalan universities have already made significant progress on this.

In Norway, a variety of research information systems were initially in use by the universities. The ministry wanted to end to this diversity in the area of research information and decided that all research institutions should move to one single new system. BIBSYS recognized that streamlining and integration of the back-office and front-office services of libraries are needed, as well as the institutional repositories and the national research information system. This need for integration was one of the reasons for selecting a library system of the next generation.

The National Library of Finland regards a role in the research evaluation infrastructure as one of the important roles

for the future. These activities would be closely related to the current roles of the National Library in national licensing and IT infrastructure.

In France, ABES has already developed a national portal for electronic theses. An extension of this role to other research publications and a link with a national research information system would be the logical next step.

#### 4.5 A Variety of Other Services

The above-mentioned four strategic lines represent the most important trends in the development of national and regional service organizations. In addition, a variety of other activities can be distinguished.

- Long-term archiving of electronic information. Usually the library organization instigates these activities, which are carried out by a national organization, generally the national library. An example is Switzerland, where RERO has set up a service for theses and the Swiss National Library is responsible for the actual archiving.
- Shared storage of less frequently used material. Examples are the CBUC in Catalonia which has initiated a shared storage area of less frequently used material, and the UK Research Reserve project in the United Kingdom. The UKRR should offer a collaborative, coordinated and sustainable approach to securing the long-term retention, storage and access to low-use printed research journals.
- Services for Web 2.0 applications. The VZG implemented social network functions in the Central Library System (CBS) for the GBV libraries.
- The major service providers have already implemented these kinds of tools in their new services.
- Development of a comprehensive and effective infrastructure for digitization. This is on the agenda of various joint networks in Germany, such as GBV/VZG and BSZ. BSZ has been engaged in a number of digitization projects on historical music and sound recordings and historical journals.

### 5 Concerns About Budget Cuts, Cost-Effectiveness and Governance

The library network organizations that have been discussed in the context of the ABES report are all engaged in planning new services and dealing with the challenges of the digital library in the era of Google, Amazon and Web 2.0.

Pressure on these organizations also comes from governments, funding bodies and network partners. They demand that the network organizations function efficiently and cost-effectively and demonstrate that they do provide added-value, in particular in view of budget cuts and cost-savings in universities in many countries. The participating universities and the ministries that control the library network organizations demand a governance structure which reflects their position and responsibility. They also demand greater transparency and accountability.



## 5.1 Financial Pressure and the Need to be More Cost-Effective

One of the reasons for creating the Lyrasis consortium in the US, serving more than 6,000 institutions, was to “enable libraries to control the cost of information” and thus “to provide affordable capacity and expertise for members.” The program of the California Digital Library also stresses the need to demonstrate efficiency and effectiveness and that collaborative efforts create substantial savings. “In an era of diminished resources and increased attention to accountability, it is even more important to commit to this goal.”

One of the key issues at the 2011 American College and Research Libraries Conference was that “Libraries are being viewed by administrators as a business with questions regarding Return on Investment (ROI) for the funding allocated to library operations.”<sup>9</sup> (9)

The National Library of Finland expects that the services they provide for the libraries in the country will become more important in the near future because of the limited resources of libraries and budget cuts due to the economic situation. Most of the other library service organizations have not yet explicitly addressed the consequences of the economic crisis and budget cuts for universities in their strategic plans, but there is a clear awareness that these developments could significantly change the situation.

The report by the Wissenschaftsrat<sup>10</sup> could be seen as an important indicator of this development. This report on library unions in Germany emphasized the need for more efficiency: “Deshalb spricht der Wissenschaftsrat Empfehlungen aus, die darauf zielen, die festgestellten Redundanzen und Ineffizienzen zu minimieren. Dies schließt eine deutliche Reduzierung der Zahl der Verbünde ein. Die dadurch freigesetzten Ressourcen könnten dafür genutzt werden, die Innovationskräfte zu steigern.”

According to this report, in addition to the basic services, additional innovative services should be provided. Open Access, publishing, licensing, authentication, full-text searching, digitization, archiving and access to primary research data are mentioned as areas that require higher strategic priority.

## 5.2 Governance

In the long run, the creation of a library network organization could lead to a situation in which the organization becomes an entity in its own right and its link with participating libraries and funding bodies becomes weaker.

In 2009, the most successful library consortium in the US, OhioLink, suffered from a major interruption of its services because of failures in its computer system. These unexpected failures stimulated a debate about its future. One of the problems identified was that the governance of Ohio-

Link was no longer informed by the active participation of the academic leaders. The gap between the governing body of the consortium and the membership had apparently become too wide (<<http://maagbloc.ysu.edu/ohiolink/page/2>>).

The experiences in Norway show that a gap between the activities of the central library organization BIBSYS and the preferences of the participating universities had gradually developed. Tools and software developed at BIBSYS were not used by the most important libraries in the network.

Looking at library history in the Netherlands, we can conclude with hindsight that the commercialization of the Pica organization, changes in governance, and competition between library leaders have contributed to the fragmentation of the innovative library developments in this country. Close cooperation would have led to the realization of much more at lower cost.

Most library network organizations are aware of this threat and thus discussing how they can improve their governance structure. One of the objectives of RERO is to redefine the governance and structure of the organization, in order to better take into account the diversity of the network and to be more efficient in decision-making. CBUC wants to improve the synergy between the members of the consortium and to take the characteristics and size of the various libraries into account. One of the current strengths of this consortium is that the member institutions feel that they are its owners. The management of the consortium is therefore keen to keep the links between the consortium and the individual research libraries as strong as possible. One of the objectives in GBV's strategic plan for 2011-2015 is to strengthen the governance of the VZG.

The joint statement of the Wissenschaftsrat and the Deutsche Forschungsgemeinschaft on the future of library networks in Germany<sup>11</sup> clarifies that funding bodies will become more involved in the library network strategies. The two organizations confirm the need for more coordination and also demand the creation of a coordinating body, a “Koordinationsgremium.” In the future, basic library services should be provided centrally. Additional innovative services should be developed and provided not on a regional basis but in a joint effort. It is expected that this clear message will have an influence on other network organizations in Europe and it reflects the fact that libraries and their network organizations are at a crossroads, forced there by external pressure.

## 6 Some Conclusions

From this overview of the services and strategies of a select number of library network organizations made on behalf of the French library organization ABES, a few conclusions can be drawn.

- There is a clear need for new library systems for both the back-office and the front-end (searching, discovery and

9 ACRL 2011, ‘A Declaration of Interdependence’, The Charleston Report, March/April 2011, Vol.15, No. 5. <<http://www.charlestonreport.com/2011/04/v-15-5-marchapril-2011/>>.

10 Empfehlungen zur Zukunft des bibliothekarischen Verbundsystems in Deutschland/ by Wissenschaftsrat, Berlin, January 2011.

11 Zur Zukunft der Bibliotheksverbünde als Teil einer überregionalen Informationsinfrastruktur in Deutschland. Gemeinsame Erklärung/ by Wissenschaftsrat und Deutsche Forschungsgemeinschaft, – Köln/ Bonn, February 2011.

- delivery) in order to make better use of the opportunities provided by cloud computing, to better share data, to reduce the work in the back-office and to have discovery tools in place that provide a Google-like user experience.
- Library systems of the next generation should be capable of seamlessly integrating into the academic environment and the relevant financial systems, human resources management systems, authentication systems, student information systems, research information systems and the digital learning environment.
  - All library network organizations are engaged in a process of benchmarking and selection of these new systems because they feel that the old systems are no longer sufficient in the open environment in which universities are operating.
  - In some countries, such as Norway and Finland, there is or has been a concerted attempt to benefit from joint acquisitions and developments. In other countries, such as Germany and the Netherlands, the variety of solutions and approaches at the national level is significant.
  - There is increasing pressure from universities, governments, national authorities and funding bodies to work more efficiently, to collaborate more closely and to realize joint solutions with respect to library systems and services to the benefit of the research community in the country.
  - Without external pressure, libraries should also do much more to take advantage of the opportunities of network communication, and the joint acquisition and implementation of state-of-the-art systems. In the age of Google, Microsoft and Amazon, it is unwise not to share resources in the area of metadata, electronic publications and other digital objects. Libraries and library networks should benefit optimally from the services that are available in the cloud and from the work that has been done by other libraries, library network organizations and service providers.
- In the coming years important decisions will have to be taken by libraries and library network organizations. It is recommended that institutions join forces wherever this is possible and beneficial for libraries and not wait until cooperation and the centralization of services is forced on them by universities, ministries and other funding bodies. We have learnt from the past experience of those institutions discussed here that libraries often need external pressure to give up some of their autonomy, but it would be much better to initiate these changes from the bottom-up. Even if all back-office and discovery services were to be outsourced, many important responsibilities in key areas will remain for research libraries, varying from heritage collections to Open Access publishing, from research data to learning support.